8.8 HAZARDOUS MATERIALS

8.8.1 INTRODUCTION

This section discusses the hazardous materials that will likely be handled, used and/or stored at the Kings River Conservation District Community Power Plant (KRCD CPP). It contains a discussion and analysis of the potential impacts on human health and the environment that can result from the use of these hazardous materials, focusing on off-site impacts and including the potential for cumulative impacts along with measures proposed to mitigate these potential impacts. Also included in this section is a discussion of the federal, state and local laws, ordinances, regulations and standards (LORS) that are applicable to the proposed KRCD CPP. The applicable regulatory agencies are identified along with contact information. A list of the permits required and a schedule for obtaining these permits is also provided.

8.8.2 AFFECTED ENVIRONMENT

8.8.2.1 Project Site Area

KRCD is proposing to develop the KRCD CPP, a nominal 565-megawatt (MW) natural gas-fired combined-cycle base load power plant. The plant will be located near the City of Parlier, in Fresno County on an approximately 32-acre project site. The site is located in an area currently zoned for agriculture and being used predominately for agricultural purposes (vineyards). Existing structures on the project site include a vacant rural dwelling, detached garage and barn. Approximately 15 acres of a 40-acre parcel to the immediate south of the project site will be used for temporary staging and parking during construction. The KRCD CPP project site, construction staging area and associated linear facilities as described below are shown on Figure 1-3 in Chapter 1, Executive Summary.

Natural gas for the KRCD CPP will be provided by a new approximately 26-mile long 20-inch underground pipeline interconnection to the Southern California Gas Company (SCG) Line 7000 near the City of Visalia, California. The new gas pipeline will primarily follow existing roads and be located in public right-of-way. Five construction staging areas have also been identified for use during construction of the gas pipeline, each with an approximate size of 200 feet by 200 feet.

The KRCD CPP will deliver electric power to the Pacific Gas & Electric Company (PG&E) transmission grid through a new approximately five mile-long 230-kilovolt (kV) radial transmission line between the on-site 230-kV switchyard site and PG&E's McCall Substation. The transmission line will cross both private property and public right-of-way.

The primary source of process makeup water for the KRCD CPP will be recycled water delivered by new underground pipeline interconnections to the Parlier Wastewater Treatment Plant (WWTP) and the Sanger WWTP effluent percolation and evaporation ponds located on Lincoln Avenue (i.e., Lincoln Ponds). The Parlier WWTP is located adjacent to the north of the plant site, and the interconnection will be located at the northern plant site boundary. The proposed interconnection to the Sanger Lincoln ponds is approximately five miles north and will be located primarily along existing roadways. Currently two options are being considered for the water pipeline interconnection to Lincoln Ponds (i.e., Water Supply Pipeline Option 1 and Option 2). Up to four new shallow wells recovering percolated effluent will provide a back-up cooling water supply.

Potable water for domestic use will be supplied by a new groundwater well to be installed on the project site. There is no offsite linear associated with the potable water supply. Domestic wastewater will be discharged to the Parlier WWTP. The sewer interconnection is located on the northern boundary of the project site with no offsite linear.

8.8.2.2 Sensitive Receptors

The KRCD CPP is located in an area currently zoned for agriculture. The area is predominately used for agricultural purposes (vineyards). Surrounding land uses include agricultural land to the west and north/northwest. The parcel south of the site (15 acres of which will be utilized for construction staging) is primarily vacant with a few structures and rural dwellings. To the east of the site is the County of Fresno Southeast Regional Disposal Site, a Class III landfill that was closed in 1998. The City of Parlier WWTP is adjacent to the north.

An identification of sensitive receptors (including schools, places of worship, hospitals and emergency-response facilities, day-care, medical, and long-term health care facilities) was completed within a six-mile radius of the project site by Environmental Data Resources, Inc. (EDR). The EDR report identified 76 sensitive receptors within the six-mile radius. The report is included as Appendix 8.8-1, EDR Offsite Receptor Report.

The nearest operating school is Indianola Elementary School, located at 11524 East Dinuba Avenue and approximately one-half mile from the project site. The other sensitive receptors located within approximately one to two miles of the project site are included below in Table 8.8-1. Figure 8.8-1 identifies those receptors located within an approximate one-mile radius of the project site. The closest hospitals to the project site are the Selma District Hospital and the Selma Community Hospital, which are both located approximately two miles from the project site.

Table 8.8-1
Sensitive Receptors Located Within 1 to 2 Mile of the Project Site
KRCD CPP

Receptor Name	Address	Type	Distance from KRCD CPP project site
Fruitvale School*	South Bethel Avenue Parlier, CA	Historical Resource	0.2 miles
Indianola Elementary School	11524 East Dinuba Avenue Selma, CA	School	0.47 miles
Parlier Child Care Center & Infant Center	Not reported Parlier, CA	Daycare facility	1.53 miles
Abraham Lincoln Middle School	1239 Nelson Boulevard Selma, CA	School	1.57 miles
John C. Martinez Elementary School	13174 East Parlier Avenue Parlier, CA	School	1.83 miles
Mendocino School	Part of John C. Martinez Elementary School site Parlier, CA	School	1.9 miles
La Colonia Headstart	8770 S. Mendocino Avenue Parlier, CA	Daycare facility	1.9 miles
Alice's Wonderland	Not reported Selma, CA	Daycare facility	1.93 miles

*School is non-operational and is marked by a historic building.
Source: EDR, 2006

8.8.3 ENVIRONMENTAL CONSEQUENCES

Hazardous materials will be used at the KRCD CPP during construction and operations. These hazardous materials were evaluated in this section for their hazardous characteristics. Some of these hazardous materials will be stored on the site continuously, while others will be brought onsite for initial plant start-up or be brought onsite for periodic maintenance. Applicable hazardous materials were reviewed for their potential to migrate off-site in the event of an accidental release. As described later in this section, the only hazardous material with a significant potential for an off-site release is aqueous ammonia. The methodology used to evaluate the impacts from an accidental release of this chemical is described in Section 8.8.3.4, Offsite Consequence Analysis.

8.8.3.1 Construction Impacts

Hazardous Materials Inventory

During KRCD CPP construction, the hazardous materials that are anticipated to be used include: motor vehicle fuels and oils (e.g., gasoline, diesel fuel, motor oils), hydraulic fluids, lubricants, cleaners (e.g., solvents), paints and paint thinner, welding flux, adhesives and sealants. There are no realistic alternatives to the use of motor vehicle fuels and oils for the construction equipment.

Similarly, use of the various paints, sealants and other hazardous substances used during construction activities is necessitated by the requirements of the structures and equipment involved.

No regulated substances (i.e., acutely hazardous materials, as defined per the California Health & Safety Code, Section 25532) will be used during KRCD CPP construction, including construction of the offsite linear facilities (electric transmission line, water and natural gas pipelines and associated facilities). Since they will not be used, no additional discussion of the handling or storage of regulated substances is included in this section.

As compared with KRCD CPP operations, the substances that will be brought on site during construction will be in relatively small quantities, e.g., 55-gallon drums. The substances will be stored and used in accordance with the rules developed by the construction contractor, who will be responsible for ensuring that hazardous materials handling is in compliance with the applicable federal, state and local LORS.

Hazardous Materials Impacts

The construction contractor will implement Best Management Practices (BMPs) and provide appropriate training for construction personnel in the handling of hazardous materials. As noted above, the construction contractor will incorporate procedures into its work rules to ensure that hazardous materials are stored and applied in accordance with their specified uses and stored in a way that prevents their migration into the environment. Therefore, the use of hazardous materials during KRCD CPP construction is expected to result in an insignificant impact to the environment.

The most likely releases of hazardous material during construction will be small quantity fuel spills during construction equipment refueling operations. If this were to occur over a hard surface, the excess fuel will be cleaned up. If the spill were to occur over soil, the contaminated soil will be removed, and deposited into 55-gallon drums for disposal off-site as a hazardous waste. The general procedures for hazardous materials handling during KRCD CPP construction are provided in Section 8.8.3.5, Mitigation Measures. Additional information on disposal of hazardous materials is also included in Section 8.9, Waste Management.

8.8.3.2 Operation & Maintenance Impacts

Hazardous Materials Inventory

Hazardous materials will also be used and/or stored onsite during ongoing operation and maintenance (O&M) of the KRCD CPP. These materials, are typical for similar facilities and may include solvents and hydraulic and lubricating oils for the operation of the combustion turbine generators (CTGs). Aqueous ammonia will also be used onsite to control nitrogen oxide

(NOx) emissions through selective catalytic reduction (SCR). Table 8.8-2 includes a list of hazardous materials that will be used onsite during operation of the proposed KRCD CPP, as well as their compositions, uses, location and type of storage. All materials will be delivered to the KRCD CPP site by truck. Table 8.8-3 provides a description of the hazardous materials that will be used onsite during operation of the proposed KRCD CPP, as well as their chemical inventory and Reportable Quantities (RQ).

Table 8.8-2
Use and Location of Hazardous Materials
KRCD CPP

Chemical	Use	Storage Location	State	Type of Storage	Toxicity/Health Hazards
Ammonium Bifluoride	Cleaning of heat recovery steam generator (HRSG) during initial startup and once every 3 to 5 years	Near each HRSG	Solid Crystals	Initial Startup and Periodically Onsite	Toxic, may be fatal if swallowed; extemely corrosive, causes severe burns, absorbed through the skin
Anti-Foam (e.g. NALCO 71 D5 ANTIFOAM)	Brine concentrator to control foaming	Water treatment facility	Liquid	Continuously Onsite	May act as an irritant
Aqueous Ammonia (29% Solution)	Control NOx emissions through SCR	Near northern HRSG	Liquid	Continuously Onsite	Irritant to permanent damage from inhalation
Antifreeze	Closed cooling loops for fire pump and standby power engines	Maintenance Shop	Liquid	Continuously Onsite	Harmful if swallowed
Antiscalant	Prevents scale buildup in reverse osmosis membranes	Water treatment facility	Liquid	Continuously Onsite	May cause slight irritation to the skin and moderate irritation to the eyes
Calcium Sulfate	Brine concentrator initial startup seeding	Water treatment facility	Solid	Initial Startup and Periodically Onsite	May act as an irritant
Chelating Agents	Brine concentrator cleaner	Water treatment facility	Liquid	Continuously Onsite	Eye irritant
Citric Acid	Cleaning of HRSG during initial startup and once every 3 to 5 years	Near each HRSG	Solid Powder	Initial Startup and Periodically	May act as an irritant
Cleaning chemicals/detergents	Periodic cleaning of HRSG and combustion turbine	Water treatment facility, laboratory and maintenance shop	Liquid	Continuously Onsite	Refer to individual chemical contents
Coagulant Aid Polymer (e.g., NALCO NALCOLYTE 8799)	Coagulant for plant makeup water	Water treatment facility	Liquid	Continuously Onsite	May cause irritation to skin and eyes with prolonged contact
Corrosion Inhibitor (NALCO 8305 Plus)	Cooling tower cooling water corrosion inhibitor	Near Cooling Tower	Liquid	Continuously Onsite	Irritant to eyes, skin and respiratory tract

Table 8.8-2
Use and Location of Hazardous Materials
KRCD CPP

Chemical	Use	Storage Location	State	Type of Storage	Toxicity/Health Hazards
Diesel No. 2 (fuel oil)	Fuel for fire pump engine	Near fire pump	Liquid	Continuously Onsite	Harmful if swallowed
Disodium Phosphate	Boiler water alkalinity control	Water treatment facility/laboratory	Granular Solid	Continuously Onsite	Eye and skin irritant. May be harmful if ingested in quantity.
Filter Aid Polymer (eg NALCO NALCLEAR 7763)	Used for multi-media filter maintenance	Water treatment facility	Liquid	Continuously Onsite	Low volatility and toxicity
Formic acid	Cleaning of HRSG	Near each HRSG	Liquid	Prior to Initial Startup	Extremely corrosive. Inhalation of vapor can cause serious injury. Ingestion may be fatal. Liquid can cause severe damage to skin and eyes. Combustible.
Hydraulic Oil	High-pressure combustion turbine starting system, turbine control valve actuators	Contained within equipment	Liquid	Continuously Onsite	Harmful if swallowed
Hydrochloric Acid (30%)	Cleaning of HRSG during initial startup and once every 3 to 5 years; small quantity kept onsite for maintenance	Near each HRSG and Water treatment facility	Liquid	Initial Startup and Periodically Onsite; Small quantity continuously onsite	Extremely corrosive. Inhalation of vapor can cause serious injury. Ingestion may be fatal. Liquid can cause severe damage to skin and eyes.
Hydroxyacetic acid	Cleaning of HRSGs; small quantity kept onsite for maintenance	Near each HRSG and Water treatment facility	Solid Crystals	Prior to Initial Startup; Small quantity continuously onsite	Harmful if swallowed. Cause burns. Severe eye and skin irritant. Respiratory irritant. Very destructive of mucous membranes.
Laboratory reagents (various liquid and solids)	Water/wastewater laboratory analysis	Water treatment facility/laboratory	Liquid and Granular Solid	Continuously Onsite	Refer to individual chemical contents
Lubrication Oil	Lubricate rotating equipment (e.g., gas turbine and steam turbine bearings)	Contained within equipment	Liquid	Continuously Onsite	May be harmful if swallowed

Table 8.8-2
Use and Location of Hazardous Materials
KRCD CPP

Chemical	Use	Storage Location	State	Type of Storage	Toxicity/Health Hazards
Mineral Insulating Oil	Transformers/switchyard	Contained within transformers and switches	Liquid	Continuously Onsite	May be harmful if swallowed
Neutralizing amines (e.g., Nalco 356 – cyclohexylamine 20-40%, morpholine 5-10%)	Corrosion control of condensate piping	Near each HRSG	Liquid	Continuously Onsite	Toxic if swallowed or inhaled. Inhalation may be fatal. Liquid may cause burns to eyes, skin or mouth. Readily absorbed through the skin.
Non-Oxidizing Biocide (e.g., NALCO 7330 - 5-Chloro-2-Methyl-4-Isothiazolin-3-one(1.1%) 2-Methyl-4-Isothiazolin-3-one(1.1%))	Cooling tower biological control	Cooling tower chemical facility	Liquid	Continuously Onsite	Corrosive - causes burns. May cause sensitization by skin contact. Very destructive of mucous membranes
Oxygen Scavenger (e.g., NALCO ELIMIN-OX – carbohydrazide or carbonic dihydrazide)	Oxygen scavenger for use in process feedwater to deaerator	Water treatment facility	Liquid	Continuously Onsite	Skin, eye and respiratory irritant
Phosphonate (eg NALCO 7385)	Antiscalant for use in reverse osmosis unit	Water treatment facility	Liquid	Continuously Onsite	Skin, eye and respiratory irritant.
Scale Inhibitor (Polyacrylate)	Cooling tower scale inhibitor	Cooling tower chemical facility	Liquid	Continuously Onsite	Eye irritant
Sodium Bisulfite	Dechlorination of reverse osmosis feedwater	Water treatment facility	Liquid	Continuously Onsite	Corrosive, irritation to eyes, skin and lungs, may be harmful if digested
Sodium Bromide	Cooling tower biocide and process water pretreatment	Cooling tower chemical facility and water treatment facility	Liquid	Continuously Onsite	Skin, eye and respiratory irritant. Prolonged exposure may lead to bromide rashes.

Table 8.8-2
Use and Location of Hazardous Materials
KRCD CPP

Chemical	Use	Storage Location	State	Type of Storage	Toxicity/Health Hazards
Sodium Carbonate	Cleaning of HRSG during initial startup and once every 3 to 5 years	Water treatment facility and near each HRSG	Solid Powder	Initial Startup and periodically Onsite	Irritant. May be harmfulk if swallowed.
Sodium Hydroxide (50% wt.))	Demineralizer resin regeneration (if onsite regeneration used), pH neutralization, and reactor clarifier/softener chemical	Water treatment facility/laboratory	Liquid	Continuously Onsite	Very corrosive. Causes severe burns. May cause serious permanent eye damage. Very harmful by ingestion.
Sodium Hypochlorite (Bleach – 12.5%)	Biocide for circulating water system and process water pretreatment	Cooling tower chemical facility and water treatment facility	Liquid	Continuously Onsite	Corrosive, causes burns to skin and eyes. Harmful by ingestion, inhalation and through skin contact. Skin irritant.
Sodium Nitrate	Cleaning of HRSG, initial startup and once every 3 to 5 years	Near each HRSG	Solid Crystals	Initial Startup and Periodically Onsite	Harmful if swallowed. Skin, eye and respiratory irritant.
Sodium Nitrite	Chemical cleaning of the HRSGs	Outside near HRSGs	Solid	Initial startup and periodically onsite	Toxic if swallowed. Severe eye irritant. Respiratory and skin irritant.
Stabilized Bromine (e.g., NALCO STABREX ST70 - Sodium Hydroxide 1 to 5%, Sodium Hypobromite 10 to 50%)	Biocide for circulating water system and process water pretreatment	Cooling tower chemical facility and water treatment facility	Liquid	Continuously Onsite	Corrosive, irritant to eyes and skin. Harmful if ingested or inhaled.
Sulfur Hexafluoride	Switch gear devices	Contained within equipment	Liquid	Continuously Onsite	Non-toxic, but acts as an asphyxiant.
Sulfuric Acid (93%)	Circulating water pH control, demineralizer resin regeneration (if onsite regeneration used), pH neutralization	Outside, near cooling tower chemical facility and water treatment facility	Liquid	Continuously Onsite	Extremely corrosive, causes serious burns. Highly toxic. Harmful by inhalation, ingestion and through skin contact. Ingestion may be fatal. Skin contact can lead to extensive and severe burns

Table 8.8-3
Chemical Inventory, Description of Hazardous Materials Stored Onsite, and Reportable Quantities
KRCD CPP

Trade Name	Chemical Name	CAS Number	Maximum Quantity Onsite	CERCLA SARA RQ[a]	RQ of Material as Used Onsite[b]	LaFollette Bill TPQ[c]	Proposition 65
Ammonia Bifluoride	Ammonia Bifluoride	1341-49-7	200 lb	100 lb	100 lb	[e]	No
Anti-Foam (eg NALCO 71 D5 ANTIFOAM)	Hydrotreated light distillate (10-20%)	6742-47-8	400 gal	[e]	[e]	[e]	No
Aqueous ammonia (29% solution)	Ammonium hydroxide	7664-41-76	19,000 gal	100 lb	500 lb	500 lb	No
Antifreeze	Propylene glycol	57-55-6	55 gal	[e]	[e]	[e]	No
Antiscalant	Anti-scalant	None	200 gal	[e]	[e]	[e]	No
Calcium Sulfate	Calcium Sulfate	10101-41-4	4000 lbs	[e]	[e]	[e]	No
Chelating Agents	Ethylenendiaminetetra-acetic acid (EDTA)	60-00-4	55 gal	5000 lbs	5000lb	[e]	No
Citric Acid	Citric Acid	77-92-9	100 lbs	[e]	[e]	[e]	No
Cleaning chemicals/detergents	Various	None	100 gal	[e]	[e]	[e]	No
Coagulant Aid Polymer (e.g., NALCO NALCOLYTE 8799)	Sodium chloride Polyquaternary amine	7647-14-5 20507700000-5062P	800 gal	[e] [e]	[e] [e]	[e] [e]	No
Corrosion Inhibitor (NALCO 8305 Plus)	Cooling tower cooling water corrosion inhibitor	None	200 gal	[e]	[e]	[e]	No
Diesel No. 2 (fuel oil)	Oil	None	500 gal	42 gal [(f) (g)]	42 gal[(f) (g)]	[e]	Yes
Disodium Phosphate	Sodium Phosphate, Dibasic	7558-79-4	500 lb	5000 lb	5000 lb	[e]	No

Table 8.8-3
Chemical Inventory, Description of Hazardous Materials Stored Onsite, and Reportable Quantities
KRCD CPP

Trade Name	Chemical Name	CAS Number	Maximum Quantity Onsite	CERCLA SARA RQ[a]	RQ of Material as Used Onsite[b]	LaFollette Bill TPQ[c]	Proposition 65
Dispersant (NALCO TRASAR 23263)	Cooling tower cooling water dispersant	64665-57-2	200 gallons	[e]	[e]	[e]	No
Filter Aid Polymer (eg NALCO NALCLEAR 7763)	Hydrotreated light distillate Ethoxylated C10-16 Alcohols Acrylic Polymer	64742-47-8 68002-97-1 20507700000-5027P	800 gal	[e] [e] [e]	[e] [e] [e]	[e] [e] [e]	No No No
Formic Acid	Formic Acid	64-18-6	600 lb. prior to startup.100 gal on a regular basis	5000 lbs	5000 LBS	[e]	No
Hydraulic oil	Oil	None	1000 gal	42 gal[(f) (g)]	42 gal[(f) (g)]	[e]	No
Hydrochloric Acid (30%)	Hydrochloric Acid (30%)	7647-01-0	10,000 lbs initially and once every 3-5 years; 55 gal. on a regular basis	5000 lbs	16,667 lbs	[e]	No
Hydroxyacetic Acid	Gyrolic Acid	None	1000lbs. prior to startup; 100 gal on a regular basis	[e]	[e]	[e]	No
Laboratory reagents (liquid)	Various	None	20 gal	[e]	[e]	[e]	No
Laboratory reagents (solid)	Various	None	100 lb	[e]	[e]	[e]	No
Lubrication Oil (Turbine and generator)	Oil	None	30,000 gal	42 gal[(f) (g)]	[g]	[e]	Yes

Table 8.8-3
Chemical Inventory, Description of Hazardous Materials Stored Onsite, and Reportable Quantities
KRCD CPP

Trade Name	Chemical Name	CAS Number	Maximum Quantity Onsite	CERCLA SARA RQ[a]	RQ of Material as Used Onsite[b]	LaFollette Bill TPQ[c]	Proposition 65
Mineral insulating oil	Oil	8012-95-1	100,000 gal	42 gal[(f) (g)]	[g]	[e]	Yes
Neturalizing amines	cyclohexylamine 20-40%, morpholine 5-10%						
Non-oxidizing biocide (e.g., NALCO 7330)	5-chloro-2-methyl-4-isothiazolin-3-one (0.3%) 5-Chloro-2-Methyl-4-Isothiazolin-3-one (1.1%)	2682-20-4 26172-55-4	800 gal	[e]	[e]	[e]	No
Oxygen Scavenger (eg. NALCO ELMIM-OX)	Carbohydrazide or Carbonic dihydrazide	497-18-7	1000 lb. prior to start-up; 100 gal on a regular basis	[e]	[e]	[e]	No
Phosphonate (eg NALCO 7385)	2-jphosphono-1,2,4-Butanetricarboxylic acid	37971-36-1	800 gal	[e]	[e]	[e]	No
Scale inhibitors (various)	Polyacrylate	Various	500 gal	[e]	[e]	[e]	No
Sodium Bisulfite	Sodium bisulfite (38 to 70%)	7631-90-5	800 gal	5,000 lb		[e]	No
Sodium Bromide	Sodium hydroxide (1 to 5%)	1310-73-2	500 gal	1,000 lb	20,000 lb	[e]	No
Sodium Carbonate	Sodium Carbonate	497-19-8	1000lb. initially and once every 3 to 5 years	[e]	[e]	[e]	No
Sodium Hydroxide (50% weight)	Sodium Hydroxide (50%) wt.	1310-73-2	200 gal	1000 lbs	2000 lbs	[e]	No
Sodium Hypochlorite (Bleach) – 12.5%)	Sodium hypochlorite (10.3 to 12 %)	7681-52-9	7,000 gal	100 lb	1,000 lb	[e]	No

Table 8.8-3
Chemical Inventory, Description of Hazardous Materials Stored Onsite, and Reportable Quantities
KRCD CPP

Trade Name	Chemical Name	CAS Number	Maximum Quantity Onsite	CERCLA SARA RQ[a]	RQ of Material as Used Onsite[b]	LaFollette Bill TPQ[c]	Proposition 65
Sodium Nitrate	Sodium Nitrate	7631-99-4	500 l8-bs initially and once every 3 to 5 years	[e]	[e]	[e]	No
Sodium Nitrite	Sodium Nitrite	7632-00-0	500 lbs	100 lbs	100 lbs	[e]	No
Sodium Sulfate	Sodium Sulfate	7757-82-6	4000 lbs	[e]	[e]	[e]	No
Stabilized Bromine (NALCO STABREX ST70)	Sodium hydroxide (1 to 5%) Sodium hypobromite (10 to 50%)	1310-73-2 13824-96-9	2,000 gal	1,000 lb	20,000 lb	[e]	No
Sulfur Hexaflouride	Sulfur hexafluoride	2551-62-4	200 lb	[e]	[e]	[e]	No
Sulfuric Acid	Sulfuric acid (93 to 98 %)	7664-93-0	2000 gal	1,000 lb	1,075 lb	[e]	No

[a] RQ for a pure chemical, per the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) [Ref. 40 CFR 302, Table 302.4]. Release equal to or greater than RQ must be reported. Under California law, any amount that has a realistic potential to adversely affect the environment or human health or safety must be reported.

[b] RQ for materials as used onsite. Since some of the hazardous materials are mixtures that contain only a percentage of a reportable chemical, the reportable quantity of the mixture can be different than for a pure chemical. For example, if a material only contains 10 percent of a reportable chemical and the RQ is 100 lb, the reportable quantity for that material will be (100 lb)/(10%) = 1,000 lb.

[c] TPQ [Ref. 40 CFR Part 355, Appendix A]. If quantities of extremely hazardous materials equal to or greater than TPQ are handled or stored, they must be registered with the local Administering Agency.

[d] Some of the chemicals have alternatives, thus the maximum quantity stored onsite can be zero if an alternative chemical is being used.

[e] No reporting requirement. Chemical has no listed RQ or TPQ.

[f] State reportable quantity for oil spills that will reach California state waters [Ref. CA Water Code Section 13272(f)].

[g] Per the California Regional Water Quality Control Board, they will like all oil spills to surface water reported, even for less than the state reportable quantity of 42 gal.

Acronyms:
CAS – Chemical Abstract Services number
SARA – Superfund Amendments and Reauthorization Act of 1986
lb – pounds
gal - gallons

Table 8.8-3
Chemical Inventory, Description of Hazardous Materials Stored Onsite, and Reportable Quantities
KRCD CPP

Trade Name	Chemical Name	CAS Number	Maximum Quantity Onsite	CERCLA SARA RQ[a]	RQ of Material as Used Onsite[b]	LaFollette Bill TPQ[c]	Proposition 65

RQ – Reportable Quantity
TPQ – Threshold Planning Quantity

Hazardous Materials Impacts

The hazardous materials to be used during KRCD CPP O&M are listed in Tables 8.8-2 and 8.8-3. The transportation and use of these hazardous materials is not anticipated to result in any significant impacts, since all of these materials are commonly transported to and in used at similar and other facilities throughout the state. Hazardous materials will be delivered to the KRCD CPP site periodically. These deliveries will be accomplished primarily by trucks, which have been designed and built to minimize any release of material in the event of a vehicle accident during transportation. Section 8.6, Traffic & Transportation, discusses proposed routes for deliveries to the site, including the frequency of deliveries of hazardous materials. Trucks transporting hazardous materials will comply with any applicable permits and LORS as discussed further in Section 8.6, Traffic & Transportation.

All hazardous materials will be stored in containers, tanks or pressure vessels, which have been designed and built in accordance with the requirements of applicable LORS and fire and safety codes. Secondary containment will be provided and hazardous materials will be stored together, as feasible, to reduce the number of storage locations. However, incompatible materials will be segregated, and KRCD CPP operating plans and procedures will include emergency response procedures for each hazardous substance.

During normal KRCD CPP operations, there will be no releases of hazardous materials. However, accidental (emergency) releases are possible. Any accidental release of most of the hazardous materials used by the KRCD CPP will be contained on-site. All of the substances shown in Tables 8.8-2 and 8.8-3 are hazardous, especially sulfuric acid, neutralizing amine and ammonia, which are further discussed below.

Sulfuric acid is a highly corrosive chemical that is capable of causing severe damage to humans, if it is inhaled or comes into contact with the skin. However, since sulfuric acid has a relatively low vapor pressure or volatility, i.e., it does not easily change from a liquid to gaseous state upon release. The off-site threat to human life from an emergency release is considered insignificant.

Neutralizing amine is a corrosive chemical that can cause damage to the eyes and skin. Similar to sulfuric acid, neutralizing amine also has a relatively low volatility. The off-site threat to human life from an emergency release is considered insignificant.

The hazardous material with the greatest potential to migrate off-site is ammonia. The KRCD CPP will use aqueous ammonia, i.e., an ammonia/water solution that consists of approximately 29 percent ammonia and 71 percent water. The aqueous ammonia will be stored in an enclosed tank, which will be connected by piping to the SCR emissions control equipment. The design of

the storage vessel and piping will include safety features that will reduce the potential for accidental releases of ammonia.

A release or spill of aqueous ammonia will form a pool and evaporate over time into the air. At relatively low concentrations ammonia vapor does not pose a threat, e.g., the odor threshold of ammonia is approximately five parts per million (ppm) and irritation of the nasal passages and throat is noticeable at 30 to 50 ppm. However, at high concentrations, i.e., greater than 2,000 ppm, ammonia gas can result in severe injury or death. Because of this, emergency release modeling was performed to assess possible impacts from the accidental release of some or all of the aqueous ammonia stored on-site. Emergency release modeling is described below in Section 8.8.3.4.

8.8.3.3 Fire and Explosion Risk

Natural gas, which is the main fuel source for the KRCD CPP, is flammable. The most likely scenario for a fire or explosion fueled by natural gas will be a leak in the supply pipeline. However, since this pipeline will be designed, constructed and maintained in accordance with applicable regulations imposed by the California Public Utilities Commission (CPUC), the risks of either fire or explosion will be minimized. Chapter 5, Natural Gas Supply includes additional information on the design, construction and operation of the natural gas pipeline, including a discussion of applicable LORS.

Other gases that may be used during KRCD CPP O&M activities such as welding include acetylene, argon and oxygen. However, potential fire and risk explosion impacts associated with the use of these gases are considered insignificant based on the following:

- The gases will be stored in federal Department of Transportation (DOT) approved safety cylinders, which are secured to prevent damage;
- The gases will be stored in limited quantities (e.g., smaller multiple cylinders, rather than one large unit); and
- The gases will be separated by type, (i.e., flammable gases vs. oxidizers, with incompatible gases stored separately).

Some of the other hazardous materials listed above in Tables 8.8-2 and 8.8-3 are flammable. These include: diesel fuel, lubrication oil and neutralizing amines. Hydraulic oil and formic acid are considered combustible. All of these flammable and combustible substances will be handled in accordance with the Hazardous Materials Business Plan (HMBP), which will be prepared for and approved by Fresno County. Compliance with the HMBP should minimize the risks of fire

and explosion associated with these substances. While aqueous ammonia, as a gas rather than a liquid, is considered combustible for a relatively narrow range of concentration in air, the evaporation rate is such that the lower end of this range will not be reached, if an ammonia spill were to occur.

8.8.3.4 Off-Site Consequence Analysis

Since there is human activity in the vicinity of the proposed KRCD CPP, an offsite consequence analysis was conducted to assess the risk to humans from the accidental release of aqueous ammonia from the project site. Aqueous ammonia will be stored in a horizontal aboveground storage tank. However, the maximum amount in the tank at any time will be 19,900 gallons. This storage tank will be surrounded by a secondary containment, e.g., a concrete wall, such that the secondary containment area is capable of holding the entire tank contents. The aqueous ammonia will be delivered to the site by truck. The ammonia offloading area will be a concrete apron, which is adjacent to and sloped down into the storage tank's secondary containment.

Two emergency release scenarios were evaluated to predict the downwind concentrations of ammonia and to assess the extent of the toxicity of the release. The complete failure of the main storage tank into the secondary containment (diked) area was designated as the worst-case scenario. The alternate, more-likely scenario, will be leakage from the delivery truck hose. This release will leak into a catch basin.

Emissions from each scenario were also calculated. The methodology contained in the Risk Management Program Guidance for Offsite Consequence Analysis (United States Environmental Protection Agency (USEPA), 1999) was used to calculate emissions. This document also discusses appropriate emission calculations for worst-case and alternative scenarios.

Meteorological conditions used in calculation of the emissions and concentration calculations varied with each scenario. For the worst-case scenario, following USEPA guidance (USEPA, 1999) a wind speed of 1.5 meters/second (m/sec) and Pasquill-Gifford stability class F (most stable) were used. For the alternative scenario, a wind speed of three m/sec, and stability class D (neutral stability) were used. Table 8.8-4 summarizes the meteorological parameters used in these analyses.

Table 8.8-4
Meteorological Data Used In Emergency Release Modeling
KRCD CPP

Meteorological Parameter	Worst-Case Scenario	Alternative Scenario
Wind Speed (m/sec)	1.5	3.0
Stability Class	F (6)	D (4)
Ambient Temperature in degrees Fahrenheit (^{o}F)	81	81
Relative Humidity (%)	50	50

For the worst-case scenario, a pool of 19,900 gallons of aqueous ammonia, the maximum amount to be stored on-site, was assumed to fill the diked area. The size of this area will be 50 feet by 24 feet (1200 square feet). Two tank saddles occupy 46.6 square feet each, so the net area will be 1153.4 square feet. The temperature of the solution was assumed to be 81^{o}F (27 degrees Celsius (^{o}C)), which is the average temperature of the hottest month over the last 30 years in Fresno. The diked area could contain the entire volume of the tank. Following USEPA guidance (1999) for 30 percent by weight solutions of aqueous ammonia within a diked area, the rate of evaporation will be 42 pounds per minute.

For the alternative scenario, 4.1 gallons of aqueous ammonia spilled into the delivery truck unloading catch basin trough of 50 square feet was assumed. The loss of 4.1 gallons was based on the volume of a two-inch internal diameter hose of 25 feet in length. However, assuming a one-centimeter pool depth, the pool area will be less than 20 square feet, which is smaller than the catch basin trough area. The RMP*Comp program (version 1.07) (USEPA, 2001) can be used to estimate the emissions from this type of release. For a 30 percent weight solution with the liquid temperature at 81^{o}F, the alternative scenario evaporation rate will be 0.9 pounds per minute. Table 8.8-5 summarizes the parameters used to develop the emissions rates for both release scenarios.

Table 8.8-5
Parameters Used In Calculation Of Evaporation Rates For Emergency Release Modeling
KRCD CPP

	Worst-Case Scenario	Alternative Scenario
Spill amount (in gallons)	19,900	4.1
Dike area (in square feet)	1153.4	50
Uncontained spill area (in square feet)	81,000[1]	16.7[2]
Ammonia weight percent	30	30
Release temperature (in ^{o}F)	81	81
Evaporation rate (in pounds per minute)	41.98	0.91

[1] The spill will be contained within the dike. Therefore, the diked area (1153.4 square feet), rather than the uncontained spill area, was used in the calculation of the evaporation rate.
[2] The uncontained spill area will be smaller than the diked area. Therefore, this uncontained spill area, assuming a 1-centimeter depth of aqueous ammonia, was used in the calculation of the evaporation rate.

The Bowman Environmental Engineering (version 3.01, 1993) SLAB model (Ermak, 1990) was used to assess the distances from the evaporating pools to toxic thresholds for ammonia under the worst-case and alternative scenarios. The California Energy Commission (CEC) de minimus level of 75 ppm and the American Industrial Hygiene Association's Emergency Response Planning Guideline-2 (ERPG-2) level of 150 ppm were the toxic thresholds used in this analysis. The CEC uses the 75 ppm level as a significance criterion and the ERPG-2 level is the maximum concentration to which most people could be exposed for up to an hour without a) suffering serious or permanent health effects, or b) impairing their ability to protect themselves. The material properties for ammonia listed in the SLAB manual were input to the model along with the calculated evaporation rate. The emissions were assumed continuous over a 60-minute averaging time. Table 8.8-6 lists the variables input to the SLAB model.

Table 8.8-6
SLAB Model Input Parameters For Emergency Release Modeling
KRCD CPP

Modeling Variable	Name[1]	Worst-Case Scenario	Alternative Scenario
Release Gas Properties			
Molecular weight of source gas (kilograms (k))	Wms	1.70E-02	1.70E-02
Vapor heat capacity, constant pressure (joule per kilogram degrees Kelvin (j/kg-k))	Cps	2.17E+03	2.17E+03
Temperature of source gas (k)	Ts	2.40E+02	2.40E+02
Density of source gas (in kilograms per cubic meter (kg/m3))	Rhos	8.65E-01	8.65E-01
Boiling point temperature	Tbp	2.40E+02	2.40E+02
Liquid mass fraction	cmed0	0.00E+00	0.00E+00
Liquid heat capacity (j/kg-k)	Cpsl	4.29E+03	4.29E+03
Heat of vaporization (joule per kilogram (j/kg))	Dhe	1.37E+06	1.37E+06
Liquid source density (kg/m3)	Rhosl	6.83E+02	6.83E+02
Saturation pressure constant	Spa	1.03E+01	1.03E+01
Saturation pressure constant (k)	Spb	2.13E+03	2.13E+03
Saturation pressure constant (k)	Spc	-3.30E+01	-3.30E+01
Spill Characteristics			
Spill type	Idspl	1	1
Mass source rate (kilograms per second)	Qs	3.17E-01	6.85E-03
Continuous source duration (second)	Tsd	3.60E+03	3.60E+03
Source area (meter (m)2)	As	1.07E+02	1.55E+00
Vertical vapor velocity (m/sec)	Ws	3.42E-03	5.10E-03
Source height (m)	Hs	0.00E+00	0.00E+00
Field Parameters			
Concentration averaging time (s)	Tav =	3.60E+03	3.60E+03
Maximum downwind distance (m)	xffm =	variable	variable
Concentration measurement height	Zp(1)=	1.50E+00	1.50E+00
Ambient Metereological Properties			
Ambient measurement height (m)	Za	1.00E+01	1.00E+01
Ambient wind speed (m/sec)	Ua	1.50E+00	3.00E+00

Table 8.8-6 **SLAB Model Input Parameters For Emergency Release Modeling** **KRCD CPP**			
Modeling Variable	**Name[1]**	**Worst-Case Scenario**	**Alternative Scenario**
Ambient temperature (k)	Ta	3.00E+02	3.00E+02
Relative humidity (percent)	Rh	5.00E+01	5.00E+01
Atmospheric stability class value	Stab	6.00E+00	4.00E+00
Surface roughness height (m)	Z0	1.00E-02	1.00^{E}-02
Additional Parameters			
Sub-step multiplier	Ncalc	1	1
Source: (Ermak, 1990) [1] Names are as defined in the SLAB Model, which is included as Appendix 8.8-2.			

For the worst-case release scenario, the ammonia concentration will fall below 75 ppm approximately 131 feet (39.9 meters) downwind from the center of the diked area. The toxic endpoint of 150 ppm will be reached approximately 127 feet (38.6 meters) downwind from the center of the bermed area. These impacts will fall within the project fence line, which is located approximately 202 feet (61.7 meters) to the north of the ammonia source center.

For the alternative scenario, the ammonia concentration will fall below 75 ppm approximately 176 feet (53.7 meters) downwind from the center of the spill. The toxic endpoint of 150 ppm will be reached approximately 112 feet (34.0 meters) downwind from the center of the spill. These impacts will fall within the project fence line, which is located approximately 202 feet (61.7 meters) to the north of the ammonia source center.

Based on the SLAB modeling results, it is reasonable to conclude that there will be no significant off-site impacts from an accidental release of aqueous ammonia for both the worst-case and alternative release scenarios. The SLAB results for both release scenarios are summarized in Table 8.8-7. More detailed modeling information is provided in Appendix 8.8-2, Ammonia Emergency Release Modeling.

Table 8.8-7 **Summary Of SLAB Emergency Release Modeling: Distance To Toxic Endpoints** **KRCD CPP**				
	Worst-Case Scenario		**Alternative Scenario**	
	75 ppm	150 ppm	75 ppm	150 ppm
Distance (meters)	39.9	38.6	53.7	34.0

Impacts at the Indianola School

Under the worst case scenario the impact from an accidental release of ammonia at the Indianola School is predicted as 0.0 ppm. The alternative scenario is estimated to result in an impact of 0.3 ppm at the Indianola School. Neither of these potential impacts is significant.

8.8.3.5 Cumulative Impacts

The most likely potential cumulative impact resulting from KRCD CPP use of hazardous materials will be a simultaneous off-site release by the KRCD CPP and one or more other users of hazardous materials such that the combined impacts overlapped at some off-site point and thereby resulted in an exposure to the public that was significantly greater than the impact resulting from an off-site release by the KRCD CPP alone. Hazardous materials that do not migrate off-site, such as sulfuric acid, will not present a potential cumulative impact. The hazardous material with the greatest likelihood of migrating off-site in the event of an emergency release is aqueous ammonia. However, the use of aqueous ammonia by the KRCD CPP should not result in a significant cumulative impact. Any releases of ammonia will be atypical events, i.e., extremely rare and of short duration. Based on statistics provided in other power plant applications to the CEC, ammonia (all forms) averages 0.017 accidental releases per process per year, and 0.018 accidental releases per million pounds stored per year. The most likely event, on-site (delivery truck) loading line failure, averages 0.005 accidental releases per process per year.

The duration of an emergency release will be on the order of one hour or less. Given the nature of an emergency release of this type, it is highly unlikely that its impacts will over lap with those from an emergency release by other hazardous materials users in the vicinity of the KRCD CPP, assuming that an accidental release from the KRCD CPP resulted in significant off-site impacts. However, as noted in the discussion of modeling results for an emergency release of ammonia, there will be no significant off-site impacts from an accidental release of ammonia by the KRCD CPP, as no off-site areas will be exposed to a concentration of 75 ppm or more. Therefore, there will be no cumulative hazardous materials impacts associated with the KRCD CPP.

8.8.3.6 Mitigation Measures

The following discussion presents mitigation measures that will be implemented during KRCD CPP construction and O&M to mitigate risks in handling hazardous materials, particularly the risk of inadvertent spills or leaks that might pose a hazard to human health or the environment.

Construction

As discussed in Section 8.8.3.1, the hazardous materials that are anticipated to be used during construction include vehicle fuels and oils as well as various lubricants, solvents and paints.

Most of these materials, e.g., lubricants, solvents, paints, will be brought on site in relatively small quantities, e.g., 5-55 gallon containers, stored in a secure area, and used in accordance with the rules developed by the construction contractor, who will be responsible for ensuring that hazardous materials handling is in compliance with applicable regulations. Larger quantity materials, e.g., vehicle fuel, will be stored on-site in a service tanker or temporary storage tank.

The construction contractor will implement training, work plans and various procedures for the prevention of accidental releases of hazardous materials. Although not intended as a complete or project-specific list, the following standard procedures are anticipated to be included in the measures for prevention of accidental release:

- Hazardous materials will be adequately and properly labeled as well as securely stored;
- Equipment and vehicle maintenance (and re-fueling, to the extent practicable) will be performed in designated areas, which have hard surfaces and spill containment equipment (e.g., catch pans, absorbents), and are located away from sources of combustion, water bodies or over soils;
- If a spill occurs, it will be remediated and cleaned up as quickly as possible. If soil is contaminated, it will be removed and packaged for off-site disposal; and
- Construction personnel will be trained in the procedures and emergency services/agency contact information will be available on-site for obtaining assistance with or reporting, as necessary, accidental release events.

Operations & Maintenance

During ongoing O&M, some hazardous materials will be stored onsite. The proposed KRCD CPP will include a number of design features to reduce the likelihood and minimize the impacts of inadvertent release of hazardous materials. All hazardous materials will be stored on-site in tanks or other containers, which are approved for such use. Materials that are incompatible will be stored separately. Storage areas, containers and piping, which are potentially subject to hazards from vehicles, will be shielded by traffic barriers. The KRCD CPP will also include a fire suppression system, which will be activated in the case of fire at or near the hazardous materials storage locations. Some form of secondary containment will also be used to ensure that any leaks are not allowed to migrate to other KRCD CPP areas or soils/water bodies. Pre-fabricated storage shed type structures with built-in secondary containment may be used for smaller amounts of hazardous materials, while berms, dikes, curbs or sumps will be used for secondary containment of larger amounts of hazardous material. Hazardous wastes generated by the KRCD CPP will be stored separately and collected by hazardous waste recyclers/transporters for final disposal off-site. The KRCD CPP will implement a safety program during both its

construction and O&M phases. This program will provide practices and procedures for safe operation, implementation of emergency responses and the use of personnel protective equipment. Safety programs are described further in Section 8.10, Worker Health and Safety. Hazardous waste disposal is described further in Section 8.9, Waste Management.

As required for air emissions control, the KRCD CPP will need to store ammonia on-site. To mitigate potential impacts from an emergency release of ammonia, aqueous rather than anhydrous ammonia will be used. The ammonia storage tank will be enclosed by a secondary containment structure (e.g., concrete berm) to ensure that any loss of tank contents will be prevented from migrating beyond this secondary containment area. The unloading area for the ammonia deliver truck will have a sloped area draining to a sump to catch and hold any spills that may result during the transfer of ammonia.

8.8.4 LAWS, ORDINANCES, REGULATIONS, AND STANDARDS (LORS)

Applicable Federal, state and local LORS that govern the storage, handling and use of hazardous materials are summarized below in Table 8.8-8.

Table 8.8-8
Summary of Applicable LORS
KRCD CPP

Regulation/Program	Description/Project Applicability/Conformance (AFC Section Reference)
Federal	
Comprehensive Environmental Response, Compensation and Liabilities Act of 1980 (CERCLA or Superfund), as amended by the Superfund Amendments and Reauthorization Act of 1986 (SARA), Title III (also known as the Emergency Planning and Community Right-to-Know Act or EPCRA) (i.e. CERCLA/SARA) Section 301-303 – Emergency Planning	Establishes requirements for facilities regarding reporting on Extremely Hazardous Substances (EHS) that are used and stored onsite in excess of Threshold Planning Quantities (TPQ). Designed to improve chemical safety and protect public health and the environment by the development of emergency response and preparedness capabilities through better coordination and planning. The KRCD CPP site will store ammonia, an EHS, in excess of the applicable TPQ. An HMBP or HMBP type document will be prepared and submitted to the Fresno County Environmental Health Division, which is the Certified Unified Program Agency (CUPA) for the project area. See Section 8.8.3.
CERCLA/SARA Section 304 : Emergency Notification	Requires immediate notification if there is a release of a hazardous substance that exceeds the RQ for that substance. Because the KRCD CPP could have a release of a hazardous substance in excess of an RQ, the HMBP or HMBP type

Table 8.8-8 Summary of Applicable LORS KRCD CPP	
Regulation/Program	**Description/Project Applicability/Conformance (AFC Section Reference)**
	document will include reporting and notification procedures for this type of event. See Section 8.8.4.1.
CERLCA/SARA Section 311 & 312: Community Right-To-Know Requirements	Section 311: Requires preparation of a material safety data sheet (MSDS) for chemicals that are kept on-site and submittal to the Local Emergency Planning Commission (LEPC), the State Emergency Response Commission, (SERC) and the local fire department. Section 312: Requires a facility to submit an emergency and hazardous chemical inventory form to the LEPC, SERC, and local fire department for hazardous chemicals, which required a MSDS (in compliance with Section 311, above) and are on site in quantities above specified threshold levels. The KRCD CPP includes chemicals in excess of the applicable threshold levels. The HMBP or HMBP type document will include MSDS, and the HMBP or HMBP type document will be submitted to the CUPA (for forwarding on the LEPC) as well as the Fresno County Fire Protection District. See Section 8.8.3.3.
CERCLA/SARA Section 313: Toxic Chemical Release Reporting	Requires annual reporting of information on routine releases of hazardous materials to the environment. As part of its air emissions control process, the KRCD CPP will release ammonia into the environment. The HMBP or HMBP type document will describe reporting procedures. See Section 8.8.3.3.
Clean Air Act Amendments, Section 112 40 Code of Federal Regulations (CFR) 68	Regulates air emissions from area, stationary, and mobile sources to protect public health and the environment. Requires a Risk Management Plan (RMP), if listed hazardous materials are stored in excess of specified TQ. The KRCD CPP will store ammonia in excess of the federal TQ, so an RMP will be prepared. See Section 8.8.3.4.

Table 8.8-8 Summary of Applicable LORS KRCD CPP	
Regulation/Program	**Description/Project Applicability/Conformance (AFC Section Reference)**
Clean Water Act , Section 311 40 CFR 112	Prevents oil (petroleum) discharges from reaching navigable waters of the United States or adjoining shorelines. Requires the preparation of a Spill Prevention Control and Countermeasures (SPCC) Plan if any single above ground storage tank holds 660 gallons of petroleum or the total on-site petroleum storage is 1,320 gallons. Because the KRCD CPP will store more than 1,320 gallons of diesel fuel and other petroleum products, an SPCC Plan is required and will be prepared. See Section 8.8.4.1.
State	
California Health & Safety Code, Section 25270 – 25270.13: Aboveground Petroleum Storage Tank Program	This program, which has the same trigger thresholds as 40CFR112, ensures compliance with federal Oil Pollution Prevention Program. It requires owners or operators of aboveground petroleum storage tanks to file storage statements, and implement spill prevention measures, including the development of a SPCC Plan. Because the KRCD CPP will store more than 1,320 gallons of diesel fuel and other petroleum products, an SPCC Plan is required and will be prepared. See Section 8.8.3.
California Health & Safety Code, Section 25500, et. seq.: Hazardous Materials Release Response Plans and Inventory Act (or Business Plan Act)	Requires businesses using hazardous materials to prepare a business plan, i.e., an HMBP, to protect public health and safety and the environment in connection with the handling and release or threatened release of hazardous materials. The Business Plan Act is not applicable to cities, counties and special districts, since they are not considered businesses (Attorney General 1994); therefore, this Act is not applicable to KRCD, which is considered a special district. However, the KRCD CPP does use hazardous materials and in order to comply with other (e.g., federal) reporting requirements related to hazardous materials, an HMBP or HMBP type document will be prepared and submitted to the CUPA. See Section 8.8.3.3.

Table 8.8-8 Summary of Applicable LORS KRCD CPP	
Regulation/Program	**Description/Project Applicability/Conformance (AFC Section Reference)**
California Health & Safety Code, Sections 25531, et seq.: California Accidental Release Prevention Program	The purpose of the code is to reduce the frequency of releases of hazardous substances and reduce the consequences in the event a release occurs. The code requires registration with the applicable local CUPA and the preparation of an RMP if hazardous materials are handled or stored in excess of threshold levels. While federal RMP requirements for aqueous ammonia only apply to concentrations of 20% or more and a TQ of 20,000 lbs, the California RMP requirement is applicable for ammonia concentrations of 1% or more and a TQ of 500 lbs. Because the KRCD CPP will store more than 500 lbs of aqueous ammonia an RMP will be prepared and submitted to the CUPA. See Section 8.8.3.
Safe Drinking Water and Toxics Enforcement Act (Proposition 65)	Requires on-site posted warning for listed chemicals known to the State of California to cause cancer or reproductive toxicity. The relatively broad nature of the Proposition 65 listed chemicals makes it virtually certain that the KRCD CPP will fall under the warning requirement (e.g., through the use of diesel fuel, turbine lubricating oils). Therefore, the KRCD CPP will post a warning notice in accordance with the applicable Proposition 65 notification requirements. See Section 8.8.3.
California Government Code, Section 65850.2	Prohibits the issuance of an occupancy permit unless a facility has demonstrated compliance with Section 25531 of the Health & Safety Code (RMP). The KRCD CPP will prepare and submit an RMP, thereby removing this potential occupancy permit restriction. See Section 8.8.3.4.
Local	
Fresno County Environmental Health Division	The Fresno County Environmental Health Division is the CUPA for the project. The CUPA is responsible for oversight and approval of the HMBP, RMP and is the agency to contact in the event of an emergency release of hazardous material.

Table 8.8-8 Summary of Applicable LORS KRCD CPP	
Regulation/Program	**Description/Project Applicability/Conformance (AFC Section Reference)**
	The KRCD CPP will file its HMBP or HMBP type document and RMP with the CUPA and will contact the CUPA should an emergency release of hazardous material occur. See Section 8.8.3.4.

8.8.4.1 Federal

The SARA of 1986, Title III amends the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) and governs hazardous substances by establishing a nationwide emergency planning and response program. Title III requires states to establish a process for developing local chemical emergency preparedness programs and to receive and disseminate information on hazardous substances present at facilities in local communities. The law provides primarily for planning, reporting, and notification concerning hazardous substances.

The Clean Air Act Regulations (40 CFR 68) are designed to prevent accidental releases of hazardous materials. The regulations require a facility that store a TQ or greater of listed regulated substances to develop an RMP, including hazard assessments and response programs to prevent accidental releases of listed chemicals.

Section 311 of the Clean Water Act (40 CFR 112) includes the requirements of the SPCC program, which was designed to prevent or contain the discharge or threat of discharge of oil into navigable waters or adjoining shorelines. Regulations require facilities to prepare a written SPCC Plan if they store oil and its release will pose a threat to navigable waters. The SPCC program is applicable if a facility has a single oil aboveground storage tank (AST) with a capacity greater than 660 gallons, total AST storage greater than 1,320 gallons, or underground storage capacity greater than 42,000 gallons.

Other related federal laws that address hazardous materials but do not specifically address their handling are the Resource Conservation and Recovery Act (RCRA), which is discussed in Section 8.9, Waste Management, Occupational Safety and Health Act, which is discussed in Section 8.10, Worker Health and Safety, and multiple gas pipeline safety requirements which are discussed in Chapter 5, Natural Gas Supply.

8.8.4.2 State

California Health and Safety Code Sections 25270 to 25270.13 are intended to ensure compliance with the federal Clean Water Act. The Above Ground Petroleum Storage Act applies to facilities with a single AST capacity of greater than 660 gallons or a combined AST capacity greater than 1,320 gallons and where there is a reasonable possibility that the tank(s) may discharge oil in "harmful quantities" into navigable waters or adjoining shore lands. If a facility falls under these criteria, it must prepare an SPCC Plan. The law does not cover AST design, engineering, construction, or other technical requirements, which are usually determined by local fire departments.

California Health and Safety Code Section 25500 requires entities that handle hazardous materials in sufficient quantities to develop an HMBP. The HMBP should include information on the location, type, quantity, and health risks of hazardous materials handled, used or disposed of and that could accidentally be released into the environment. Entities using and storing hazardous materials are required to submit the HMBP to their local administering agency (i.e., CUPA – which in the case of the KRCD CPP is the Fresno County Environmental Health Division). Releases above TQs must be reported to the CUPA and the Governor's Office of Emergency Services. The TQs for hazardous materials are 55 gallons for liquids, 500 pounds for solids, and 200 cubic feet for compressed gases measured at standard temperature and pressure.

California Health and Safety Code Section 25531 regulates the registration and handling of regulated substances under the CalARP program by directing facility owners storing or handling acutely hazardous materials in RQs to develop an RMP. The RMP should include safety information, hazard review, operating procedures, training, maintenance and compliance audits, and incident investigation. The RMP should also consider the proximity to sensitive receptors and include an evaluation of potential impacts associated with an accidental release; the likelihood of the release occurring, the magnitude of potential human exposure and the accidental history of the material.

The Safe Drinking Water and Toxics Enforcement Act (Proposition 65), which is administered by California's Office of Environmental Health Hazard Assessment, identifies chemicals that cause cancer and reproductive toxicity, informs the public, and prevents discharge of the chemicals into sources of drinking water. Lists of the chemicals of concern are published and updated periodically.

California Government Code, Section 65850.2 states that a city or county will not issue a final certificate of occupancy unless there is verification that the applicant has met applicable

requirements of California Health and Safety Code Section 25531 and prepared an RMP (if required for the facility).

8.8.4.3 Local

The CUPA for the KRCD CPP site is Fresno County Environmental Health Division. This agency is responsible for oversight and approval of the HMBP, RMP and is the agency to contact in the event of an emergency release of hazardous material. The Fresno County Environmental Health Division will be contacted in the event of a release of hazardous wastes or materials to the environment.

The design, engineering, and construction of the KRCD CPP hazardous materials storage and dispensing systems will be in accordance with applicable codes and standards including the California Vehicle and Building Codes and American Society of Mechanical Engineers and American National Standards Institute Codes. Compliance with these codes is discussed further in Chapter 2, Project Description and corresponding engineering design Appendices 2-1 through 2-7.

8.8.5 INVOLVED AGENCIES AND CONTACTS

While there are multiple regulatory agencies responsible for hazardous materials regulation (e.g., the USEPA and the California EPA) for the KRCD CPP, local agencies have primary responsibility for implementing the LORS addressed previously in Table 8.8-8. The Fresno County Environmental Health Division is the CUPA for the KRCD CPP. The Fresno County Office of Emergency Services, which is a department within the Fresno County Environmental Health Division, administers the HMBP Program and Accidental Release Prevention Program. Contact information for applicable agencies is provided below in Table 8.8-9.

Table 8.8-9
List of Hazardous Material Agency Contacts
KRCD CPP

Agency	Contact Person , Title and email	Phone Number
Fresno County Environmental Health Division (CUPA for the KRCD CPP) 1221 Fulton Mall Fresno, CA 93721	Note 1 dch@co.fresno.ca.us	(559) 445-3271
Fresno County Office of Emergency Services 1221 Fulton Mall Fresno, CA 93721	jthomas@fresno.ca.gov	(559) 445-3391
Fresno County Fire Protection District Fire Station 83 - Selma 11500 E. Mountain. View Selma, CA 93662	Jeremiah Wittwer, Firefighter	(559) 896-3378
Notes: 1. The Fresno Department of Community Health declined to provide individual contact information		

8.8.6 REQUIRED PERMITS AND SCHEDULES

No specific hazardous materials permits are required for the KRCD CPP. Although as a special district the KRCD is exempt from the requirement to prepare an HMBP under the state's Business Plan Act. However, the KRCD CPP does use hazardous materials and in order to comply with other (e.g., federal) reporting requirements related to hazardous materials, an HMBP or HMBP type document will be prepared for the KRCD CPP and submitted to the CUPA prior to the initiation of construction. This HMBP or HMBP type document will include a listing and mapping of the hazardous materials maintained on-site as well as training and emergency response/notification procedures. The HMBP or HMBP type document will allow the KRCD CPP to comply with other, e.g., federal, hazardous materials regulatory requirements, which are administered through the CUPA.

Because the KRCD CPP will use aqueous ammonia with a concentration of greater than 19 percent it is subject to both the federal RMP requirement and the state's Cal-ARP RMP requirement. Therefore, in connection with KRCD CPP use and storage of ammonia, an RMP will be prepared and submitted to the CUPA prior to the introduction of ammonia on-site. In addition to the Off-site Consequence Analysis (hazard analysis) contained in Section 8.8.3.4, the RMP will include an emergency response plan and a prevention program.

An SPCC Plan will also be prepared for the KRCD CPP because more than 1,320 gallons of petroleum products (e.g., turbine lubricating oil) will be maintained on-site. The SPCC Plan will

include a listing and mapping of the petroleum materials on-site as well as an assessment of the spill potential, spill response and notification procedures and personnel training.

8.8.7 REFERENCES

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